

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for ~~manufacturing a fragmented layer of material on a support~~preparing a catalyst structure, comprising:

forming a layer of a catalytic material on a substrate; a deposition step for depositing, in a discontinuous manner, a thin layer of this material on said support, and

followed by a step for putting this thin layer into drops~~separating the layer of the catalytic material into droplet-shaped bodies of the catalytic material adhered to the substrate;~~

wherein:

the substrate comprises a material having a surface tension lower than a surface tension of the catalytic material;

the catalytic material is a material suitable for catalyzing formation of carbon nanotubes or carbon nanofibers; and

forming the layer of the catalytic material comprises forming multiple separate layers of the catalytic material over a period of time.

Claim 2 (Currently Amended): The process according to claim 1, wherein ~~putting into drops is achieved by~~separating the layer of the catalytic material into droplet-shaped bodies comprises applying a heat treatment.

Claim 3 (Withdrawn – Currently Amended): The process according to claim 1, wherein ~~putting into drops is achieved by~~separating the layer of the catalytic material into droplet-shaped bodies comprises applying a hydrogen plasma treatment at low temperature.

Claim 4 (Currently Amended): The process according claim 1, ~~further comprising a previous step for depositing a thermal or diffusion~~ wherein the substrate comprises a barrier layer on which the layer of the catalytic material is formed.

Claim 5 (Currently Amended): The process according to claim 4, wherein:
the catalytic material comprises nickel; and
~~the thermal or diffusion barrier layer being is made of~~ comprises TiN and the material
~~is nickel.~~

Claim 6 (Currently Amended): The process according to claim 1, wherein the ~~material is~~ catalytic material comprises a metal or a semiconductor.

Claim 7 (Currently Amended): The process according to claim 1, wherein ~~the deposition step of the material layer is performed in~~ forming the layer of the catalytic material comprises forming the layer under partial pressure of ~~the presence of an oxygen partial pressure.~~

Claim 8 (Currently Amended): A ~~growth process of~~ for growing carbon nanotubes or nanofibers, comprising:

~~producing a catalytic metal layer~~ preparing a catalyst structure by the method
according to claim 1, ~~and~~
growing carbon nanotubes or nanofibers on the catalyst ~~layer thus obtained~~ structure.

Claim 9 (Currently Amended): The process according to claim 8, wherein ~~the growth of nanotubes or nanofibers is obtained by growing~~ carbon nanotubes or nanofibers comprises growing carbon nanotubes or nanofibers by chemical vapor phase deposition.

Claim 10 (Currently Amended): A process for producing substrate having a surface with controlled roughness ~~on a support~~, comprising:

~~producing a fragmented thin layer of material on this support, according to claim 1~~
preparing a catalyst structure by the method according to claim 1;

forming an oxide layer on the catalyst structure; and

polishing the resulting structure.

Claim 11 (Cancelled).

Claim 12 (Withdrawn – Currently Amended): A process for producing a substrate including a surface with a metal/oxide mix ~~on the surface of a support~~, comprising:

~~producing a fragmented thin layer of a metallic material on this support, according to claim 1~~
preparing a catalyst structure by the method according to claim 1;

forming an oxide layer on the layer of material thus formed, catalyst structure; and

a polishing step the resulting structure;

wherein the catalytic material comprises a metal.

Claim 13 (Currently Amended): A process for ~~manufacturing a fragmented layer of material on a support comprising the succession of~~ preparing a catalyst structure, comprising:

a deposition step of a diffusion or thermal forming a barrier layer on a substrate;

~~a deposition step for depositing, in a discontinuous manner, a thin layer of this material, preferably a metal, on said barrier layer, and~~
~~a step for putting this thin layer into drops;~~
forming a layer of a catalytic material on the barrier layer; and
separating the layer of the catalytic material into droplet-shaped bodies of the catalytic material adhered to the barrier layer;

wherein:

the barrier layer comprises a material having a surface tension lower than a surface tension of the catalytic material;

the catalytic material is a material suitable for catalyzing formation of carbon nanotubes or carbon nanofibers; and

forming the layer of the catalytic material comprises forming multiple separate layers of the catalytic material over a period of time.

Claim 14 (Currently Amended): The process according to claim 13, wherein ~~putting into drops is achieved by~~ forming the layer of the catalytic material comprises applying a heat treatment or by applying a hydrogen plasma treatment at low temperature.

Claim 15 (Currently Amended): The process according to claim 13, wherein ~~the deposition step of the material layer is performed in the presence of an oxygen~~ forming the layer of the catalytic material comprises forming the layer under partial pressure of oxygen.

Claim 16 (Currently Amended): A ~~growth process of~~ for growing carbon nanotubes or nanofibers, comprising:

~~producing a catalytic metal layer~~ preparing a catalyst structure by the method
according to claim 13; and
~~growing of carbon~~ nanotubes or nanofibers on the catalyst layer ~~thus~~
~~obtained~~ structure.

Claim 17 (Currently Amended): The process according to claim 16, wherein ~~the~~
~~growth of nanotubes or nanofibers is obtained~~ growing carbon nanotubes or nanofibers
comprises growing carbon nanotubes or nanofibers by chemical vapor phase deposition.

Claim 18 (Currently Amended): A process for producing a substrate having a surface
with a controlled roughness ~~on a support~~, comprising:

~~producing of a fragmented thin layer of material on this support, preparing a catalyst~~
structure by the method according to claim 13;
forming an oxide layer on the catalyst structure; and
polishing the resulting structure.

Claim 19 (Cancelled).

Claim 20 (Withdrawn – Currently Amended): A process for producing a substrate
having a surface including a metal ~~metal/oxide mix on the surface of a support,~~
~~including~~ comprising:

~~producing a fragmented thin layer of a metallic material on this support, preparing a~~
catalyst structure by the method according to claim 13;
forming an oxide layer on the layer of material thus formed, catalyst structure; and
a polishing step the resulting structure;

wherein the catalytic material comprises a metal.

Claim 21 (New): A process for preparing a catalyst structure, comprising:
forming a layer of a catalytic material on a substrate; and
separating the layer of the catalytic material into droplet-shaped bodies of the catalytic material adhered to the substrate;

wherein:

the substrate comprises a material that does not react with the catalytic material;
the catalytic material is a material suitable for catalyzing formation of carbon nanotubes or carbon nanofibers; and
forming the layer of the catalytic material comprises forming multiple separate layers of the catalytic material over a period of time.

Claim 22 (New): The process according to claim 1, wherein the barrier layer comprises TiN or an oxide.

Claim 23 (New): The process according to claim 13, wherein the catalytic material comprises a metal or a semiconductor.

Claim 24 (New): The process according to claim 21, wherein the catalytic material comprises a metal or a semiconductor.

Claim 25 (New): The process according to claim 13, wherein the barrier layer comprises TiN or an oxide.